

### Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A continuous-time active complex bandpass filter comprising:

a complex bandpass filter having a transfer function generated using only a plurality of transconductors and capacitors.

2. (Withdrawn) The continuous-time active complex bandpass filter of claim 1 wherein the transfer function includes an all-pole system.

3. (Original) The continuous-time active complex bandpass filter of claim 1 wherein the transfer function includes a system containing transmission zeros.

4. (Original) The continuous-time active complex bandpass filter of claim 1 wherein said filter is fabricated in monolithic technology selected from the group consisting of silicon CMOS, BiCMOS and bipolar processes.

5. (Withdrawn) The continuous-time active complex bandpass filter of claim 2 wherein said filter is fabricated as an on-chip active device.

6. (Withdrawn) The continuous-time active complex bandpass filter of claim 2 and further including:

a first-Order lowpass filter section having:

I input and 90-degree phase shifted Q input;

I output and 90-degree phase shifted Q output;

a pair of input transconductors for setting up the filter section gain;

a pair of  $1/g_m$  resistors connected to said input transconductors and a pair of

capacitors each having a value of  $C$ , connected to said pair of resistors to form a filter section pole at frequency  $g_m/C$ ; and

a pair of cross-coupled transconductors  $g_{mA}$  connected to said input transconductor and said pair of resistors to shift the position of the said pole to a complex location at  $(g_m + jg_{mA})/C$ , or  $(g_m - jg_{mA})/C$ .

7. (Withdrawn) The continuous-time active complex bandpass filter of claim 6 and further including:

a second-Order biquad filter including a cascaded pair of said first-Order lowpass filter sections wherein said lowpass filter sections create a pair of complex conjugate poles at  $(g_m \pm jg_{mA})/C$ .

8. (Original) The continuous-time active complex bandpass filter of claim 3 wherein said filter is fabricated as an on-chip active device.

9. (Original) The continuous-time active complex bandpass filter of claim 3 and further including:

a first-Order lowpass filter section having:

I input and 90-degree phase shifted Q input;

I output and 90-degree phase shifted Q output;

a pair of input unity-gain buffers;

a pair of input capacitors having a value  $C_1$  connected to said buffers;

a pair of  $1/g_m$  resistors connected to said input capacitors;

a pair of output capacitors having a value  $C$  connected to said pair of resistors to form a filter section pole at frequency  $g_m/(C + C_1)$ ;

a first pair of cross-coupled transconductors  $g_{mA}$  connected to said output

capacitors and said resistors to shift the position of the said pole to a complex location at  $(g_m + jg_{mA})/(C + C_1)$ , or  $(g_m - jg_{mA})/(C + C_1)$ ; and

a second pair of cross-coupled transconductors  $g_{mB}$  connected to said input capacitors and said resistors to form an imaginary axis zero at  $jg_{mB}/C_1$ .

10. (Original) The continuous-time active complex bandpass filter of claim 9 and further including:

a second-Order biquad filter section including a cascaded pair of said first-Order lowpass filter sections wherein said lowpass filter sections create a pair of complex conjugate poles at  $(g_m \pm jg_{mA})/(C_1 + C)$ .

11. (Original) The continuous-time active complex bandpass filter of claim 10 having a lowpass prototype of an even-Order.

12. (Original) The continuous-time active complex bandpass filter of claim 11 and further including:

at least one second-order biquad filter section containing no zeros, a single, a double, or two different imaginary axis zeros.

13. (Original) The continuous-time active complex bandpass filter of claim 10 having a lowpass prototype of an odd-Order.

14. (Original) The continuous-time active complex bandpass filter of claim 13 and further including:

one first-order lowpass filter section containing no zeros, or a single imaginary axis zero; and

at least one second-order biquad filter section containing no zeros, a single, a double, or two different imaginary axis zeros.